CLAIMS

What is claimed is:

1.   A method performed by an Internet Service Provider ("ISP") to reduce certificate revocation lists ("CRL") at access points of a wireless access network providing access to the ISP, the method comprising:

receiving a subscription request from a user terminal capable of accessing the ISP using the wireless access network;

assigning a subscription identifier to the user terminal;

providing a service certificate signed by a certificate authority including the subscription identifier; and

providing, to the user terminal, one or more session certificates to be used to access the wireless access network, the session certificates having a shorter validity period than the service certificate.

2.   The method of claim 1, further comprising:

receiving the service certificate from an access point being used by a user terminal to access the wireless access network;

determining whether the service certificate is valid; and

providing one or more new session certificates to the user terminal if the service certificate is valid.

3.   The method of claim 2, wherein determining whether the service certificate is valid comprises searching a certificate revocation list.

4. The method of claim 1, wherein the one or more session certificates are each associated with a link-level session available to the user terminal.

5. The method of claim 1, wherein each link-level session comprises a PPP session.

6. A method performed by an access point of a wireless access network, the method comprising:

    receiving a digital certificate from a user terminal seeking access to the wireless access network, the digital certificate to be used to authenticate the user terminal;

    determining a type of the digital certificate; and

    determining the validity of the digital certificate by searching a certificate revocation list (CRL) associated with the type of the digital certificate.

7. The method of claim 6, wherein determining the type of the digital certificate comprises determining whether the digital certificate comprises a service certificate or a session certificate.

8. The method of claim 7, wherein the validity periods of session certificates is shorter than the validity periods of session certificates.

9. The method of claim 8, wherein the CRL associated with session certificates is shorter than the CRL associated with service certificates.

10. A user terminal capable of communicating with a wireless access network, the user terminal comprising:

a memory to store:

a service certificate issued by an Internet Service Provider ("ISP") and signed by a certificate authority, the service certificate having a first validity period, the service certificate corresponding with a subscription of the user terminal with the ISP and to be used by the wireless access network to authenticate the user terminal; and

a session certificate issued by the ISP and signed by the certificate authority, the session certificate having a second validity period that is shorter in duration than the first validity period, the session certificate corresponding with a session subscribed to by the user terminal and to be used by the wireless access network to authenticate the user terminal.

11. The user terminal of claim 10, wherein the session comprises a link-level session.

12. The user terminal of claim 11, wherein the link-level session comprises a PPP session.

13. A machine-readable medium having stored thereon data representing instructions that, when executed by a processor of an Internet Service Provider ("ISP"), cause the processor to perform operations to reduce certificate revocation lists ("CRL") at access points of a wireless access network providing access to the ISP, the operations comprising:

receiving a subscription request from a user terminal capable of accessing the ISP using the wireless access network;

assigning a subscription identifier to the user terminal;

providing a service certificate signed by a certificate authority including the

subscription identifier; and

providing, to the user terminal, one or more session certificates to be used to access

the wireless access network, the session certificates having a shorter validity period than

the service certificate.

14.   The machine-readable medium of claim 13, wherein the instructions further cause

the processor to perform operations comprising:

receiving the service certificate from an access point being used by a user terminal

to access the wireless access network;

determining whether the service certificate is valid; and

providing one or more new session certificates to the user terminal if the service

certificate is valid.

15.   The machine-readable medium of claim 14, wherein determining whether the

service certificate is valid comprises searching a certificate revocation list.

16.   The machine-readable medium of claim 13, wherein the one or more session

certificates are each associated with a link-level session available to the user terminal.

17.   The machine-readable medium of claim 13, wherein each link-level session

comprises a PPP session.